

DEC Human Health Criteria Technical Workgroup
Meeting #2 Notes
September 30, 2015

Time of Meeting: 10:00 AM – 12:30 PM

Location of Meeting: Via GoToMeeting webinar hosted at the 2nd Floor Conference Room, Juneau Department of Environmental Conservation (DEC) Office, 410 Willoughby Ave, Suite 303, Juneau, AK 99811

Technical Workgroup for Water Quality Standards HHC Members present at the webinar:

- Nancy Sonafrank, DEC Division of Water (DEC/DOW)
- Ted Wu, DEC Division of Spill Prevention and Response (DEC/SPAR)
- Dr. Robert Gerlach, DEC Division of Environmental Health (DEC/EH)
- Dr. James Fall, Alaska Department of Fish & Game/ Division of Subsistence (DF&G/ Subsistence); Marylynne Kostick (DF&G/ Subsistence)
- Dr. Ali Hamade, Alaska Department of Health & Social Services/ Division of Public Health (DHSS/ DPH)
- Lon Kissinger, US Environmental Protection Agency Region 10 (USEPA R10)
- Michael Opheim, Seldovia Village Tribe (Seldovia); Tracie Merrill, Seldovia
- Alison Kelley, NANA Regional Corporation (NANA)
- Brett Jokela, Anchorage Water and Wastewater Utility (AWWU)
- Dr. Kendra Zamzow, Center for Science in Public Participation (CSP2)
- Dr. Lawrence Duffy, University of Alaska, Anchorage (UAA)

Interested Parties present at the webinar:

- Michelle Hale, Director, DEC/DOW;
- Wade Strickland, DEC/DOW
- Denise Elston, DEC/DOW
- Gerald Anelon, Sr., Iliamna
- Robert Napier, Red Dog Mine

Meeting Facilitator: Brock Tabor, DEC/DOW

Meeting Notetaker: Gina Shirey, DEC/DOW

Action Items:

Who	Will do What	By (Date)
Workgroup Members	• Respond to DRAFT RECOMMENDATIONS noted in the Meeting #2 Notes	October 30

**Agenda for Water Quality Standards HHC Technical Workgroup (HHC Workgroup)
Meeting #2 September 30, 2015:**

Review of HHC issues and meeting schedule

Recap Issue #1: What information about fish consumption rate is available to inform the HHC process?

- Workgroup discussion – initial thoughts

Issue #3 (part one) – What is the appropriate Level of Protection for Alaska to consider?

- FCR: Consumers v. Non-consumers
- FCR: General v. Highly Exposed population(s)
- Approaches used by other states

Public Comment

Review of HHC issues and meeting schedule

The HHC Workgroup webinar commenced around 10 am. Gina Shirey took roll call for the Workgroup members and asked other interested parties to identify themselves. Brock Tabor reviewed the expected meeting outcomes and went over the agenda for this meeting.

Recap Issue #1: What information about fish consumption rate is available to inform the HHC process?

Brock conducted the meeting by speaking from a PowerPoint presentation visible via the webinar. The PowerPoint slides were also mailed out in advanced to technical workgroup members and interested parties who pre-registered for the webinar. The purpose of the technical workgroup is to provide technical feedback on issues associated with development of human health criteria in state water quality standards, which will culminate in a summary report.

At this meeting, DEC is looking for feedback in three areas:

1. How should we use various fish consumption information?
2. Should Alaska use consumers only or non-consumers too?
3. What are the population and subpopulations of concern?

Brock showed a slide on the HHC equations.

- The fish consumption rate was in the denominator. Therefore, as the fish consumption rate gets bigger, the human health criteria number gets smaller (i.e., more stringent).
- The Relative Source Contribution (RSC) was only in the equation for non-carcinogenic pollutants.
- The Bioaccumulation Factor (BAF) is high, then fish consumption is the risk driver that determines the human health criteria for a given pollutant. If BAF is low, then drinking water intake is the driver determining the level of human health criteria.
- EPA considers marine mammals Trophic Level 5 and Alaska might want to consider looking at marine mammals.

Workgroup Discussion: Fish Consumption Information

1. Fish Consumption Literature Review:

- a) Should this be a one-time review or an ongoing catalog?
 - There doesn't appear to be a lot of on-going studies so perhaps it is a one-time review.
 - DEC should set a cut-off date after the public workshop. This could be addressed during the triennial review. Kendra also mentioned that the Asian/Pacific group is missing.

DRAFT WORKGROUP RECOMMENDATIONS:

- DEC should consider the Literature Review final as of a certain date.
- DEC should use the Literature Review for informational purposes only rather than as the basis for establishing a statewide fish consumption rate.

2. Dietary Surveys

- a) Should DEC develop a recommended survey methodology?
 - It is a good idea for DEC or EPA to develop guidance on dietary surveys for human health criteria.
 - EPA is revising guidance on fish consumption surveys and the guidance should be available soon. States and tribes can always modify the guidance to meet their needs.
 - Brock asked about an EPA Region 10 methodology.
 - It depends on how well the EPA guidance applies to Alaska.
 - There are regional differences within the state that should be recognized.
 - Lon talked about basic principles in survey design and good fundamental guidance.
 - There are differences between Interior areas and coastal areas.
- a) Should DEC develop a rating system to weight survey data?
 - DEC is trying to get at the confidence level associated with a particular data set or survey.

- The rating may also be related to the sample size.
- DEC wants to reduce the subjectivity collecting information from multiple dietary surveys and studies.
- Seldovia's study seems to have good data.
- The community harvest database is excellent and that there seemed to be agreement between the database and Seldovia's fish consumption survey.
- Along the coast, consumption of marine species is significant. Consumption of marine species seems to be pushed to relative source contribution.
- EPA allows states to consider marine species. He also mentioned a study in the Pacific Northwest showing salmon picking up contaminants in waters regulated by the CWA.

DRAFT WORKGROUP RECOMMENDATION:

- DEC should consider developing state-specific guidance for conducting dietary surveys for the purpose of establishing a fish consumption rate (range).

3. ADF&G Community Surveys

- a) What limitations should be considered for using ADFG surveys for human health criteria?
 - Jim Fall discussed the methods ADF&G uses to collect information for their community surveys at the first technical workgroup meeting.
 - The surveys ask for harvest levels and not consumption rates. The harvest survey is a good surrogate for consumption surveys. There is a lot of good data, and the data covers the whole state. Some of the data is old, though (10+ years).
 - Has ADF&G analyzed any trends related to fish consumption?
 - ADF&G has done some trend analysis, although it is a little difficult because the data in the 80's included estimates of fish harvested for dog food. He noted that harvests for dog food have gone down in recent years.
 - Fish harvest rates in southeast and southwest Alaska haven't been changing much. In western and interior Alaska, the rate seems to be declining and the decline may be attributed to restrictions on subsistence harvesting (due to declines in the king salmon fishery).
 - Are people completely reporting harvest if there are restrictions?
 - Jim said it may be an issue, but it isn't a major concern, because the surveys are voluntary and anonymous. Survey respondents are not paid.
 - ADF&G compared communities in similar situations but without harvest restrictions, and the data was similar. In areas where the most fish is harvested, there are generally no restrictions on harvest levels. For the most part, the harvest data is reliable.
 - The household is surveyed rather than the individual, but the number of people in the household is noted, so the rate can be calculated for individuals.

- What percentage of the community is surveyed?
 - It depended on the size of the community. ADF&G is usually able to survey about 80%-90% of the community.
- b) How do we use ADF&G surveys in combination with local dietary surveys?
 - Is ADF&G was still planning on diving into the Seldovia data?
 - ADF&G replied that they would like to look at the data, but they were not sure when they would have time. They said they would have to pull that data out of the Seldovia community survey.
 - For the Seldovia tribe's survey, they just interviewed the Native population.
 - ADF&G surveys all members of the community, native and non-native.
 - There are no community surveys for major towns like Anchorage, Juneau, and Fairbanks. ADF&G only surveys rural areas. They did do limited surveys on the road system.
 - Instead, ADF&G uses their annual monitoring program for fish harvests to estimate urban fish consumption. ADF&G uses two sources for their program: 1) fishery permit systems and 2) annual sportfish harvest survey. The annual survey provides good data for urban areas.
 - Is shellfish harvest documented? ADF&G does not collect data on shellfish harvest, but that the harvest is very small for urban areas.
 - How do other states compare harvest levels and consumption rates? ADF&G isn't aware of any similar programs in other states. Alaska's program seems to be unique. EPA confirmed that Alaska's program seems to be unique.

4. How do we use other related studies not developed specifically for HHC?

- Some discussion on this question is included with the previous question.
- Additional discussion may be needed related to studies in the Fish Consumption Literature Review.

Issue #3 (part one) – What is the appropriate Level of Protection for Alaska to consider?

Brock resumed his PowerPoint presentation.

- EPA used the means of various tribal surveys to determine the national average for their fish consumption rate. EPA doesn't have the statistical information to determine a "per capita" fish consumption rate.

FCR: Consumers v. Non-consumer:

1. Should Alaska's HHC population of interest include only consumers or both consumers and non-consumers?

- The Idaho paper said that you couldn't say someone was a non-consumer.
- For low consumers, the body eliminates toxics. If the fish is local, DEC has control over the contaminants versus a non-local, store-bought fish.

- Buying fish at a store was also an issue in the Idaho survey. EPA is looking at fish that fall under the Clean Water Act. They are also looking at de facto non-consumers and exposure.
- With market-based studies, it's difficult to identify the source of the fish. There's less uncertainty if you stick to rural sources.
- EPA has looked at the market question.
- There is value in protecting those who consumer fish.
- What about fish that comes from outside the US (e.g., shrimp from Asia)?
- EPA is looking at what type of habitat the fish or shellfish come from (e.g., freshwater, estuarine) regardless of country of origin.
- Idaho and Washington State HHC proposals focus on consumers only.
- This a key decision. People who are not consuming are not exposed and therefore are not part of the population of interest. If DEC uses both consumers and non-consumers, they could underestimate fish consumption.
- DEC should be looking to protect those who consume fish.
- This is why it is important to accurately identify non-consumers in the methodology. Otherwise, as the Idaho paper illustrates, fish consumption rates could be significantly overestimated.

DRAFT WORKGROUP RECOMMENDATION:

- DEC should be focused on consumers only as the population of interest, but use a methodology that accurately estimates the true percentage of non-consumers.

FCR: General v. Highly Exposed population(s)

2. Should Alaska be focusing its resources on identification and development of an FCR for the general or a subset(s) of the general population?

- Seldovia's fish consumption survey of tribal members, only one tribal member self-identified as a non-consumer. They did divide children up into several age groups to determine rates for the younger tribal members.
- EPA's 2000 methodology excludes children. When you eliminate non-consumers, you're then looking a high consumers.
- Most tribal members are high consumers.
- We are presuming that Alaska Natives are high consumers.
- What about including children? Does body weight mitigate children's consumption in the equation?
 - Body weight was not a mitigating factor for children in the equation. Children have a higher consumption rate per pound of body weight.
- EPA has a maximum cancer risk level for the high consuming population versus the general population. There is no risk level for non-carcinogens in the equation for HHC and the hazard quotient should be considered to address the risk to high consuming populations.

- There is some agreement for using the 10^{-5} risk level if the 90th or 95th percentile of consumption rates is used to mitigate a higher cancer risk level, although taking more precautions may be wise.
 - DEC's Contaminated sites program uses 10^{-5} cancer risk level.
 - If DEC is trying to be protective, we should use the 95th percentile for fish consumption rates.
- There is some concern that DEC and permittees could end up wasting a lot of resources in being too over-protective. Over protective for one type of risk leave less resources to address other types of risk.
- Would a statewide or region-specific rate would be best? There have been some discussions about using both a statewide rate and site-specific rates, because there are not a lot of discharges in remote Alaska.
- In more densely populated areas, you run into downstream issues.
- There are mining sites in remote locations.
- There are other elements for conservation and talked about overprotecting. There are natural pollutants in waterbodies. While we want to protect at the highest level, what is the value? Could this impede a community's infrastructure (e.g. wastewater treatment facility)?
- Background pollutants in the water should be considered.
- In Oregon, the water quality criteria didn't change much if the fish consumption rate was 175g/day or 225g/day.
- Does the general population in Alaska consume more than in Washington State or Idaho?
- A few years ago ADF&G calculated statewide averages. Urban Alaska is 80% of Alaska's population. The difference between urban and rural Alaska is tremendous.

3. What about subpopulations of interest?

- Iliamna area residents consume about 500 lbs/year.
- DEC should use a regional rate for rural areas.
- ADF&G has collected rural data and the tribes have collected data. Is there any difference in consumption patterns between rural and tribal only?
 - At the community level, the higher percentage of Native people, the higher percentage of subsistence harvest. There is no data for urban Alaska on that point.
- Does ADF&G have valid sample size for fish consumption in urban populations in Alaska? Yes.
- There was some data from a survey done by consultants which had some information on Anchorage. This survey might show consumption rates for urban vs rural Alaska.
- If 80% of Alaskans live in urban areas, then DEC should develop rates for sub-regions. The best approach seems to be focusing on subpopulations. The state could develop statewide or regional rates. Information about subpopulations seems to be a big data gap.

- For the native subpopulation, a lot of the 18-30 year old age group seems to have moved from rural areas to urban areas. Urban natives frequently request fish and other subsistence foods from their hometown.
- ADF&G estimates in urban areas are strictly based on harvest information. ADF&G has no measures for the movement of food from rural to urban areas.
- If dietary surveys are being done, it doesn't matter what the source of the fish is.
- What about implementation and is DEC was going to draw a line?
 - DEC is looking at regional rates, statewide rates, and site-specific rates. In the interim, DEC may use site-specific rates.
 - DEC hasn't decided yet. DEC is putting the options out to the workgroup, so we can ask what the impact of these different approaches would be.
- There definitely is a large difference in fish consumption rates and that one number shouldn't be applied to the whole state. Regional numbers are needed.
- Should end products (e.g., smoked fish) be considered?
- No matter what the fish consumption rate is, DEC has to protect at the 10^{-5} risk level.
- The fish consumption rate might be too conservative for some areas.
- The point is that different populations have different consumption rates. If there is a statewide rate, what is the acceptable risk?

DRAFT WORKGROUP RECOMMENDATIONS:

- DEC should use regional fish consumption rates.
- DEC should use 90th or 95th percentile for regional fish consumption rates, particularly if a 10^{-5} cancer risk level continues to apply.
- DEC should seek out more data on urban fish consumption.
- DEC should seek out more data on urban sub-populations (e.g., Asian, Pacific Islander) fish consumption.
- DEC should use ADF&G harvest data in establishing regional FCR for rural areas
 - Potential issues may exist with differentiating between household v. individual level consumption rates

ADF&G Presentation

- What about weekly, monthly, and annual totals?
- ADF&G's totals are annual and Seldovia's totals are monthly.
- What about the sample size?
 - ADF&G's survey was a household survey. They did ask for the household size in the survey.
- Does Seldovia's survey included children?

Yes, children's information was included for some age groups.
- ADF&G looks at pounds harvested. There is a good range of household harvest. The number of households harvesting zero is very small.
- Would be possible to write a paper describing ADF&G's presentation?

- It would take some time to put text to the graphs but that it could be done. ADF&G wouldn't be able to do this in the short-term.
- If the state wanted to use this presentation as the basis of water quality standards, the discussion should be documented.

Public comments:

There were no public comments.

The meeting adjourned around 12:30 pm.

NEXT MEETING

Technical Workgroup Meeting #3 (October 30, 2015)

- Review of HHC issues and meeting schedule
- **Recap Issue #3 (part one): What is the appropriate Level of Protection for Alaska to consider?**
 - Workgroup Recommendations
- **Issue #4a – What should Alaska include when deriving a Fish Consumption Rate?**
 - Sources of fish and shellfish
 - Local v. commercial
 - Role of salmon – what OR/WA/ID did and didn't do
 - Role of marine mammals – to be subject of a later webinar